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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,641	02/21/2002	Andreas N. Dorsel	10971150-2	9857

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EXAMINER	
FORMAN, BETTY J	
ART UNIT	PAPER NUMBER
1634	

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/080,641	DORSEL ET AL.	
	Examiner	Art Unit	
	BJ Forman	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *32,33,36-38 and 43-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *32,33,36-38 and 43-58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The finality of that action is withdrawn in view of the new grounds for rejection provided below. The rejections in the office action of 16 September 2005, not reiterated below, are withdrawn in view of the amendments and/or new grounds for rejection.

Claims 33-34, 36-38 and 43-58 are under prosecution.

The examiner and art unit for this application has changed. Please address future correspondence to Examiner BJ Forman, Art Unit: 1634.

Claim Objections

2. Claim 53 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

The claim is drawn to the detector position i.e. "wherein said detector system is positioned". The recitation can be interpreted in two ways. The first interpretation is that the detector system is at a single position i.e. where it receives constructive interference. This single position is outside the scope of Claim 48, which requires the detector be adjustable. Because the claim is no encompassed by the scope of Claim 48, it fails to properly further limit Claim 48. The second interpretation of the recitation is as an intended use for the device i.e. a method step of positioning the system so as to receive constructive interference. A recitation of intended use does not further define the apparatus of Claim 48.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 32-33, 37-38, 43, 45-50, 52-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaye (US 3,850,525, November 26, 1974) and/or Modell et al (US 6,826,422 B1, filing date January 11, 2000) in view of Schultz et al (U.S. Patent No. 6,180,415, filed 20 February 1998).

Regarding Claim 32, Kaye teaches an apparatus comprising: an interrogating light source, wherein said light source is a laser which is capable of generating multiple beams of light to detect emitted light at different wavelength or polarizations at different detection angles (see abstract; summary of invention beginning at col. 4 to col. 5 and figure 1). Kaye further teaches wherein the detector comprises a filter that filters out unwanted light and allows only the desired wavelength to be transmitted (col. 9, lines 26-61). Kaye teaches the apparatus allows for the simultaneous measurement of scattered light at different angles and different wavelengths which permits the simultaneous determination of particle size and DNA content (col. 5, lines 44-62). Modell et al teach an apparatus similar to that of Kaye comprising an interrogating light source, adjustable angle detector system that is aligned with an emission filter that filters out light of an interrogating wavelength (col. 28, line 64 to col. 29, lines 1-16). Modell et al teach wherein more than one detector each comprises a filter. Kaye and Modell are silent regarding a processor for receiving and analyzing signals from the detector. However, Schultz et al disclose a similar apparatus comprising an adjustable detection angle system (Fig.3), the system comprising more than one detector (CCD array, Column 15, lines 45-48), each of which detects different wavelengths (Column 18, lines 20-26) further comprising a

processor wherein the processor provides discriminating means for determining e.g. number of particles imaged, locations of the particles, separation between particles and motion and/or change on the imaged surface (Column 18, line 20-Column 19, line 54). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the processor of Schultz et al to the detector of Kaye and/or Modell for the expected benefit of discriminating ligand-bound particles as desired in the art (Schultz et al: Column 5, lines 16-67 and Column 18, line 20-Column 19, line 54).

Regarding Claim 33, Kaye teaches the apparatus further comprising a light source (e.g. laser, Abstract). Modell teaches the apparatus further comprising a light source (e.g. Column 14, lines 20-22 and Fig. 1). And Schultz et al teaches the apparatus further comprising a light source (e.g. Column 15, lines 31-39 and Fig. 3).

Regarding Claim 37, Modell teaches the apparatus further comprising a scanning system for scanning across the array (Column 15, lines 61-67) and Schultz teaches the system further comprising a scanning system for scanning light across the array i.e. x-y stage that moves the substrate being observed (Column 15, lines 23-30).

Regarding Claim 38, Kaye teaches an apparatus comprising a seat (sample container #10), a detector system that can detect light at multiple different positions around a cone (Fig. 2) and includes an emission filter (#61 & # 62). Modell teaches an apparatus comprising a seat (sample #27, Fig. 2), a detector system wthatcan detect light at multiple different positions around a cone (cone of light entering detector #29, Fig. 2) and includes an emission filter (col. 28, line 64 to col. 29, lines 1-16). And Schultz teaches an apparatus comprising a seat (substrate #23, Fig. 3), a detector system that can detect light at multiple different positions around a cone (cone of light entering detector #38, Fig. 3). Schultz et al teach the apparatus further comprising a processor wherein the processor provides discriminating means for determining e.g. number of particles imaged, locations of the particles, separation between particles and motion and/or change on the imaged surface (Column 18, line 20-Column 19,

line 54). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the processor of Schultz et al to the detector of Kaye and/or Modell for the expected benefit of discriminating ligand-bound particles as desired in the art (Schultz et al: Column 5, lines 16-67 and Column 18, line 20-Column 19, line 54).

Regarding Claim 43, Kaye teaches an apparatus comprising: an interrogating light source, wherein said light source is a laser which is capable of generating multiple beams of light to detect emitted light at different wavelength or polarizations at different detection angles (see abstract; summary of invention beginning at col. 4 to col. 5 and figure 1). Kaye further teaches wherein the detector comprises a filter that filters out unwanted light and allows only the desired wavelength to be transmitted (col. 9, lines 26-61). Kaye teaches the apparatus allows for the simultaneous measurement of scattered light at different angles and different wavelengths which permits the simultaneous determination of particle size and DNA content (col. 5, lines 44-62). Modell et al teach an apparatus similar to that of Kaye comprising an interrogating light source, adjustable angle detector system that is aligned with an emission filter that filters out light of an interrogating wavelength (col. 28, line 64 to col. 29, lines 1-16). Modell et al teach wherein more than one detector each comprises a filter.

Schultz et al disclose a similar apparatus comprising an adjustable detection angle system (Fig.3), the system comprising more than one detector (CCD array, Column 15, lines 45-48), each of which detects different wavelengths (Column 18, lines 20-26 and Column 19, lines 8-22). Schultz et al teach the apparatus further comprising a processor wherein the processor provides discriminating means for determining e.g. number of particles imaged, locations of the particles, separation between particles and motion and/or change on the imaged surface (Column 18, line 20-Column 19, line 54). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the processor of Schultz et al to the detector of Kaye and/or Modell for the expected benefit of discriminating

ligand-bound particles as desired in the art (Schultz et al: Column 5, lines 16-67 and Column 18, line 20-Column 19, line 54).

Regarding Claim 44, Kaye teaches the apparatus further comprising a light source (e.g. laser, Abstract). Modell teaches the apparatus further comprising a light source (e.g. Column 14, lines 20-22 and Fig. 1). And Schultz et al teaches the apparatus further comprising a light source (e.g. Column 15, lines 31-39 and Fig. 3).

Regarding Claim 46, Modell teaches the apparatus further comprising a scanning system for scanning across the array (Column 15, lines 61-67) and Schultz teaches the system further comprising a scanning system for scanning light across the array i.e. x-y stage that moves the substrate being observed (Column 15, lines 23-30).

Regarding Claim 47, Kaye teaches an apparatus comprising: an interrogating light source, wherein said light source is a laser which is capable of generating multiple beams of light to detect emitted light at different wavelength or polarizations at different detection angles (see abstract; summary of invention beginning at col. 4 to col. 5 and figure 1). Kaye further teaches wherein the detector comprises a filter that filters out unwanted light and allows only the desired wavelength to be transmitted (col. 9, lines 26-61). Kaye teaches the apparatus allows for the simultaneous measurement of scattered light at different angles and different wavelengths which permits the simultaneous determination of particle size and DNA content (col. 5, lines 44-62). Modell et al teach an apparatus similar to that of Kaye comprising an interrogating light source, adjustable angle detector system that is aligned with an emission filter that filters out light of an interrogating wavelength (col. 28, line 64 to col. 29, lines 1-16). Modell et al teach wherein more than one detector each comprises a filter. Schultz et al disclose a similar apparatus comprising an adjustable detection angle system (Fig.3), the system comprising more than one detector (CCD array, Column 15, lines 45-48), each of which detects different wavelengths (Column 18, lines 20-26 and Column 19, lines 8-22). Schultz et al teach the apparatus further comprising a processor wherein the processor provides

discriminating means for determining e.g. number of particles imaged, locations of the particles, separation between particles and motion and/or change on the imaged surface (Column 18, line 20-Column 19, line 54). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the processor of Schultz et al to the detector of Kaye and/or Modell for the expected benefit of discriminating ligand-bound particles as desired in the art (Schultz et al: Column 5, lines 16-67 and Column 18, line 20-Column 19, line 54).

Regarding Claim 48, Kaye teaches the apparatus further comprising a light source (e.g. laser, Abstract). Modell teaches the apparatus further comprising a light source (e.g. Column 14, lines 20-22 and Fig. 1). And Schultz et al teaches the apparatus further comprising a light source (e.g. Column 15, lines 31-39 and Fig. 3).

Regarding Claim 49, Modell teaches the apparatus wherein the detector includes at least one detector with an optical axis that can be moved (Column 29, lines 9-16).

Regarding Claim 50, Kaye teaches the apparatus wherein the detector comprises multiple detectors positioned at different angles (Fig. 2). Modell teaches the apparatus wherein the detector comprises multiple detectors positioned at different angles (e.g. detector array, Column 27, line 60-67). And Schultz et al teach the apparatus wherein the detector comprises multiple detectors positioned at different angles (Column 11, lines 48-54).

Regarding Claim 52, Modell teaches the apparatus further comprising a scanning system for scanning across the array (Column 15, lines 61-67) and Schultz teaches the system further comprising a scanning system for scanning light across the array i.e. x-y stage that moves the substrate being observed (Column 15, lines 23-30).

Regarding Claim 53, as stated above, the recitation of a single position or a method step of positioning does not further limit the apparatus of Claim 48. Because Kaye, Modell and Schultz teach the apparatus of Claim 48 and because Claim 53 does not further limit Claim 48, Kaye, Modell and Schultz also teach the apparatus of Claim 53.

Regarding Claim 54, Kaye teaches the apparatus wherein the detector and light source are on the same side of the array (Fig. 1). Modell teach the apparatus wherein the detector and light source are on the same side of the array (Fig. 2). And Schultz et al teach the apparatus wherein the light source and detector are on the same side of the array (Fig. 3).

Regarding Claim 55-58, Schultz et al teach the apparatus further comprising an array having a reflective coating (Column 16, lines 11-13) and an addressable array of biopolymers (i.e. mapped matrix, Column 18, lines 43-48

5. Claims 36, 45 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaye (US 3,850,525, November 26, 1974) and/or Modell et al (US 6,826,422 B1, filing date January 11, 2000) in view of Schultz et al (U.S. Patent No. 6,180,415, filed 20 February 1998) as applied to Claims 32, 43 and 48 above and further in view of Zeleny et al (U.S. Patent No. 6,215,894, filed 26 February 1999).

Regarding Claims 37, 45 and 51, Kaye teaches an apparatus comprising: an interrogating light source, wherein said light source is a laser which is capable of generating multiple beams of light to detect emitted light at different wavelength or polarizations at different detection angles (see abstract; summary of invention beginning at col. 4 to col. 5 and figure 1). Kaye further teaches wherein the detector comprises a filter that filters out unwanted light and allows only the desired wavelength to be transmitted (col. 9, lines 26-61). Kaye teaches the apparatus allows for the simultaneous measurement of scattered light at different angles and different wavelengths which permits the simultaneous determination of particle size and DNA content (col. 5, lines 44-62). Modell et al teach an apparatus similar to that of Kaye comprising an interrogating light source, adjustable angle detector system that is aligned with

an emission filter that filters out light of an interrogating wavelength (col. 28, line 64 to col. 29, lines 1-16). Modell et al teach wherein more than one detector each comprises a filter. Schultz et al disclose a similar apparatus comprising an adjustable detection angle system (Fig.3), the system comprising more than one detector (CCD array, Column 15, lines 45-48), each of which detects different wavelengths (Column 18, lines 20-26 and Column 19, lines 8-22). Kaye, Modell and Schultz teach the detector system as described but do not teach the apparatus comprises a code reader. However, biopolymer arrays have bar codes and apparatus for reading the bar codes were well known and routinely practiced in the art at the time the claimed invention was made as taught by Zeleny et al (Fig. 4). Zeleny teaches the apparatus first scans the coded information, the system responds by opening files and protocols related to the information and then sets up the apparatus to operate according to those protocols (Column 3, lines 25-67). Zeleny et al further teaches the code reader operates with minimal operator intervention and therefore increases speed and reduces errors (Column 4, lines 9-15). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the apparatus of Kaye, Modell and Schultz by adding a code reader as taught by Zeleny et al. One of ordinary skill in the art would have been motivated to do so for the expected benefit of increased speed of array processing with reduced error as taught by Zeleny et al (Column 4, lines 9-15).

Conclusion

6. No claim is allowed.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (571) 272-0741. The examiner can normally be reached on 6:00 TO 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones can be reached on (571) 272-0745. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

BJ Forman, Ph.D.
Primary Examiner
Art Unit: 1634
February 10, 2006